

DOCKET NO.: ISIS-5207

PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Brenda F. Baker, et al.

Confirmation No.: 5208

Application No.: 10/701,236

Group Art Unit: 1635

Filing Date: November 4, 2003

Examiner: Not Yet Assigned

For: SUGAR SURROGATE-CONTAINING OLIGOMERIC COMPOUNDS AND
COMPOSITIONS FOR USE IN GENE MODULATION

DATE OF DEPOSIT *April 1, 2004*

I HEREBY CERTIFY THAT THIS PAPER IS BEING
DEPOSITED WITH THE UNITED STATES POSTAL
SERVICE AS FIRST CLASS MAIL, POSTAGE PREPAID,
ON THE DATE INDICATED ABOVE AND IS
ADDRESSED TO THE UNITED STATES PATENT AND
TRADEMARK OFFICE, P.O. BOX 1450, ALEXANDRIA,
VA 22313-1450.

TYPED NAME: Elizabeth A. McLoud

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Pursuant to 37 CFR § 1.56 and in accordance with 37 CFR §§ 1.97-1.98, information relating to the above-identified application is hereby disclosed. Inclusion of information in this statement is not to be construed as an admission that this information is material as that term is defined in 37 CFR § 1.56(b).

- ☒ In accordance with § 1.97(b), since this Information Disclosure Statement is being filed either within three months of the filing date of the above-identified application, within three months of the date of entry into the national stage of

the above identified application as set forth in § 1.491, before the mailing date of a first Office Action on the merits of the above-identified application, or before the mailing date of a first Office Action after the filing of request for continued examination under § 1.114, no additional fee is required.

- ☐ In accordance with § 1.129(a), this Information Disclosure Statement is being filed in connection with ☐ the first or ☐ second After Final Submission, therefore:

☐ Certification in Accordance with § 1.97(e) is attached; or

☐ The fee of \$180.00 as set forth in § 1.17(p) is attached.

- ☐ In accordance with § 1.97(c), this Information Disclosure Statement is being filed after the period set forth in § 1.97(b) above but before the mailing date of either a Final Action under § 1.113 or a Notice of Allowance under § 1.311, or before an action that otherwise closes prosecution in the application, therefore:

☐ Certification in Accordance with § 1.97(e) is attached;

or

☐ The fee of \$180.00 as set forth in § 1.17(p) is attached.

- ☐ In accordance with § 1.97(d), this Information Disclosure Statement is being filed after the mailing date of either a Final Action under § 1.113 or a Notice of Allowance under § 1.311 but before, or simultaneously with, the payment of the Issue Fee, therefore included are: Certification in Accordance with § 1.97(e); and the submission fee of \$180.00 as set forth in § 1.17(p).

- ☐ Copies of each of the references listed on the attached Form PTO-1449 are enclosed herewith.

- ☒ Copies of references listed on the attached Form PTO-1449 are enclosed herewith
- ☒ Copies of references listed on the attached Form PTO 1449 are not required to be submitted pursuant to the June 30, 2003 recent revisions to 37 CFR § 1.98(a)(2)(i).

EXCEPT THAT:

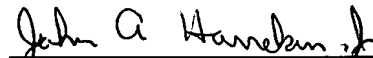
- ☒ In view of the voluminous nature of references 1, 22, 23, and the likelihood that these references are available to the Examiner, copies are not enclosed herewith.
- ☒ In accordance with § 1.98(d), copies of the following references listed on the attached Form PTO-1449 are not enclosed herewith because they were previously cited by or submitted to the U.S. Patent and Trademark Office in patent application(s) for which a claim for priority under 35 U.S.C. § 120 have been made in the instant application:
 - ☒ Copies of references **1-26, 140-167, 194-200** listed on the attached Form PTO-1449 were previously cited by or submitted to the Patent and Trademark Office in prior Application No. **08/659,440**, filed **June 6, 1996** now **U.S. Patent No. 5,898,031**; copies of references **27-112, 170-178, 201-202** listed on the attached Form PTO-1449 were previously cited by or submitted to the Patent and Trademark Office in prior Application No. **08/870,608**, filed **June 6, 1997** now **U.S. Patent No. 6,107,094**; copies of references **113-129, 168-169, 179 and 203** listed on the attached Form PTO-1449 were

previously cited by or submitted to the Patent and Trademark Office in prior Application No. 09/479,783, filed **January 7, 2000**; copies of references **180-181** listed on the attached Form PTO-1449 were previously cited by or submitted to the Patent and Trademark Office in prior Application No. **10/078,949**, filed **February 20, 2002**.

Please charge any deficiency or credit any overpayment to Deposit Account No. 23-3050. This form is submitted in duplicate.

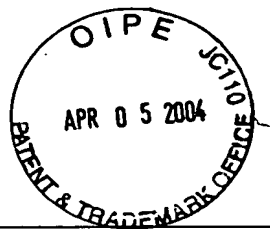
- ☐ The relevance of those listed references which are not in the English language is as follows:
- ☒ There are no listed references which are not in the English language.

Date: April 1, 2004



John A. Harrelson, Jr.
Registration No. 42,637

WOODCOCK WASHBURN LLP
One Liberty Place - 46th Floor
Philadelphia, PA 19103
Telephone: (215) 568-3100
Facsimile: (215) 568-3439



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office	Docket No. ISIS-5207	Application No. 10/701,236
	Applicant Brenda F. Baker, et al.	
	Filing Date November 4, 2003	Group 1635
	Confirmation No. 5208	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

*	1	Ausubel, et al., Eds., Current Protocols in Molecular Biology, 1988, Wiley & Sons, New York
	2	Beaucage S. and Iyer, R., "Advances in the synthesis of oligonucleotides by the phosphoramidite approach", <i>Tetrahedron Letters</i> , 1992, 48, 2223-2311
	3	Beaucage S. and Iyer, R., "The synthesis of modified oligonucleotides by the phosphoramidite approach and their applications", <i>Tetrahedron</i> , 1993, 49, 6123-6194
	4	Bhat, et al., "A Simple and Convenient Method for the Selective N-Acylation of Cytosine Nucleosides", <i>Nucleosides and Nucleotides</i> , 1989, 8, 179-183
	5	Crooke, S.T. and Bennett, C.F., "Progress in Antisense Oligonucleotide Therapeutics", <i>Annu. Rev. Pharmacol. Toxicol.</i> , 1996, 36, 107-129
	6	Crooke, et al., "Kinetic characteristics of Escherichia coli Rnase H1: cleavage of various antisense oligonucleotide-RNA duplexes", <i>Biochem. J.</i> , 1995, 312, 599-608
	7	Dagle, et al., "Targeted degradation of mRNA in Xenopus oocytes and embryos directed by modified oligonucleotides: studies of An2 and cyclin in embryogenesis", <i>Nucleic Acids Research</i> , 1990, 18, 4751-4757
	8	Dagle, et al., "Pathways of Degradation and Mechanism of Action of Antisense Oligonucleotides in <u>Xenopus laevis</u> Embryos", <i>Antisense Res. And Dev.</i> , 1991, 1, 11-20
	9	Dagle, et al., "Physical properties of oligonucleotides containing phosphoramidate-modified internucleoside linkages", <i>Nucleic Acids Research</i> , 1991, 19, 1805-1810
	10	Eder, P.S. and Walder, J.A., "Ribonuclease H from K562 Human Erythroleukemia Cells", <i>J. Biol. Chem.</i> , 1991, 266, 6472-6479

EXAMINER

DATE CONSIDERED

* A copy of this reference will not be forwarded to the U.S. Patent and Trademark Office since it is believed to be too voluminous and easily obtainable by the Examiner.



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. ISIS-5207	Application No. 10/701,236
		Applicant Brenda F. Baker, et al.	
		Filing Date November 4, 2003	Group 1635
		Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	11	Englisch, U. And Gauss, D.H., " Chemically Modified Oligonucleotides as Probes and Inhibitors ", <i>Angewandte Chemie, International Edition Engl.</i> , 1991, 30, 613-629	
	12	Haeuptle and Dobberstein, " Translation arrest by oligonucleotides complementary to mRNA coding sequences yields polypeptides of predetermined length ", <i>Nucleic Acids Res.</i> , 1986, 14, 1427-1448	
	13	Kawasaki, et al., " Uniformly Modified 2'-Deoxy-2'-fluoro Phosphorothioate Oligonucleotides as Nuclease-Resistant Antisense Compounds with High Affinity and Specificity for RNA Targets ", <i>J. Med. Chem.</i> , 1993, 36, 831-841	
	14	Kawasaki, et al., " Synthesis and Biophysical Studies of 2'-dRIBO-2'-F Modified Oligonucleotides ", ISIS Pharmaceuticals, Inc., 2280 Faraday Avenue, Carlsbad, CA 92008, USA	
	15	Martin, " Ein neuer Zugang zu 2'-O-Alkylribonucleosiden und Eigenschaften deren Oligonucleotide ", <i>Helv. Chim. Acta.</i> , 1995, 78, 486-504	
	16	Monia, et al., " Selective Inhibition of Mutant Ha-ras mRNA Expression by Antisense Oligonucleotides ", <i>J. Biol. Chem.</i> , 1992, 267, 19954-19962	
	17	Monia, et al., " Evaluation of 2'-Modified Oligonucleotides Containing 2'-Deoxy Gaps as Antisense Inhibitors of Gene Expression ", <i>J. Biol. Chem.</i> , 1993, 268, 14514-14522	
	18	Reese, C.B., et al., " 4-(1,2,4-Triazol-1-yl)-and 4-(3-Nitro-1,2,4-triazol-1-yl)-1-(β-D-Arabinofuranosyl)cytosine(Ara-C) ", <i>J. Chem. Soc. Perkin Trans. I</i> , 1982, pgs. 1171-1176	
	19	Robins, et al., " Nucleic acid related compounds. 41. Restricted furanose conformations of 3',5'-O(1,1,3,3-tetraisopropylidene-1,3-diyl)nucleosides provide a convenient evaluation of anomeric configuration^{1,2} ", <i>Can. J. Chem.</i> , 1983, 61, 1911-1920	
	20	Saison-Behmoaras, T., et al., " Short modified antisense oligonucleotides directed against Ha-ras point mutation induce selective cleavage of the mRNA and inhibit T24 cells proliferation ", <i>EMBO</i> , 1991, 10, 1111-1118	
EXAMINER		DATE CONSIDERED	



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office	Docket No. ISIS-5207	Application No. 10/701,236
	Applicant Brenda F. Baker, et al.	
	Filing Date November 4, 2003	Group 1635
	Confirmation No. 5208	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	21	Concise Encyclopedia of Polymer Science and Engineering, pgs. 858-859, Kroschwitz, J.I., Ed., John Wiley & Sons, 1990
*	22	Oligonucleotide Synthesis, A Practical Approach, M.J. Gait, Ed., IRL Press, 1984
*	23	Oligonucleotide and Analogs, A Practical Approach, F. Eckstein, Ed., IRL Press, 1991, Chapters 1-7
	24	De Mesmeker, et al., "Antisense Oligonucleotides", <i>Acc. Chem. Res.</i> , 1995, 28, 366-374
	25	Sands, et al., "Biodistribution and Metabolism of Internally ³ H-Labeled Oligonucleotides. II. 3',5'-Blocked Oligonucleotides", <i>Am. Soc. Pharmacol. Exp. Ther.</i> , 1995, 47, 636-646
	26	Strickland, et al., "Antisense RNA Directed Against the 3' Noncoding Region Prevents Dormant mRNA Activation in Mouse Oocytes", <i>Science</i> , 1988, 241, 680-684
	27	Agrawal, S. et al., "Synthesis and Anti-HIV Activity of Oligoribonucleotides and Their Phosphorothioate Analogs," <i>Ann. N.Y. Acad. Sci.</i> , 1992, 2-10
	28	Akashi, et al., "Novel Stationary Phases for Affinity Chromatography. Nucleobase-Selective Recognition of Nucleosides and Nucleotides on Poly(9-vinyladenine)-Supported Silica Gel ¹⁾ ", <i>Chem. Letters</i> , 1988, 1093-1096
	29	Alberts, et al., "DNA-Cellulose Chromatography", <i>Meth. Enzymol.</i> , 1971, 21, 198-217
	30	Arndt-Jovin, et al., "Covalent Attachment of DNA to Agarose", <i>Eur. J. Biochem.</i> , 1975, 54, 411-418

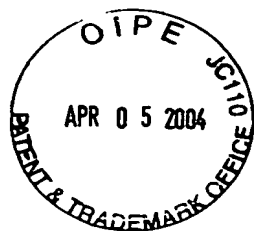
EXAMINER

DATE CONSIDERED

* A copy of these references will not be forwarded to the U.S. Patent and Trademark Office since they are believed to be too voluminous and easily obtainable by the Examiner.



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. ISIS-5207	Application No. 10/701,236
		Applicant Brenda F. Baker, et al.	
		Filing Date November 4, 2003	Group 1635
		Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	31	Blanks, et al., "An oligodeoxynucleotide affinity column for the isolation of sequence specific DNA binding proteins", <i>Nucleic Acids Res.</i> , 1988, 16, 10283-10299	
	32	Blomberg, P., "Control of replication of plasmid R1: the duplex between the antisense RNA, CopA, and its target, CopT, is processed specifically <i>in vivo</i> and <i>in vitro</i> by Rnase III", <i>EMBO J.</i> , 1990, 9, 2331-2340	
	33	Bunemann, et al., "Immobilization of denatured DNA to macroporous supports: I. Efficiency of different coupling procedures", <i>Nucleic Acids Res.</i> , 1982, 10, 7163-7180	
	34	Bunemann, H., "Immobilization of denatured DNA to macroporous supports: II. Steric and kinetic parameters of heterogeneous hybridization reactions", <i>Nucleic Acids Res.</i> , 1982, 10, 7181-7196	
	35	Chodosh, et al., "A Single Polypeptide Possesses the Binding and Transcription Activities of the Adenovirus Major Late Transcription Factor", <i>Mol. Cell. Biol.</i> , 1986, 6, 4723-4733	
	36	Crooke, et al., "Pharmacokinetic Properties of Several Novel Oligonucleotide Analogs in mice", <i>J. Pharmacol. Exp. Ther.</i> , 1996, 277, 923-927	
	37	Dake, et al., "Purification and Properties of the Major Nuclease from Mitochondria of <i>Saccharomyces cerevisiae</i> ", <i>J. Biol. Chem.</i> , 1988, 263, 7691-7702	
	38	Day, et al., "Immobilization of polynucleotides on magnetic particles", <i>Biochem. J.</i> , 1991, 278, 735-740	
	39	Drmanac, et al., "DNA Sequence Determination by Hybridization: A Strategy for Efficient Large-Scale Sequencing", <i>Science</i> , 1993, 260, 1649-1652	
	40	Duncan, et al., "Affinity Chromatography of a Sequence-Specific DNA Binding Protein Using Teflon-Linked Oligonucleotides", <i>Anal. Biochem.</i> , 1988, 169, 104-108	
EXAMINER		DATE CONSIDERED	



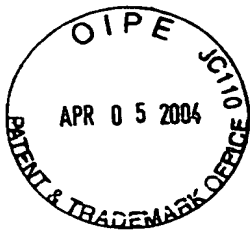
Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. ISIS-5207	Application No. 10/701,236
		Applicant Brenda F. Baker, et al.	
		Filing Date November 4, 2003	Group 1635
		Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	41	Dunn, J.J. and Studier, F.W., "Effect of RNAase III Cleavage on Translation of Bacteriophage T7 Messenger RNAs", <i>J. Mol. Biol.</i> , 1975, 99, 487-499	
	42	Elela, et al., "RNase III Cleaves Eukaryotic Preribosomal RNA at a U3 snoRNP-Dependent Site", <i>Cell</i> , 1996, 85, 115-124	
	43	Fahy, et al., "Design and synthesis of polyacrylamide-based oligonucleotide supports for use in nucleic acid diagnostics", <i>Nucl. Acids Res.</i> , 1993, 21, 1819-1826	
	44	Fishel, et al., "Z-DNA Affinity Chromatography", <i>Methods Enzymol.</i> , 1990, 184, 328-342	
	45	Fodor, et al., "Light-Directed, Spatially Addressable Parallel Chemical Synthesis", <i>Science</i> , 1991, 251, 767-773	
	46	Fusi, et al., "Ribonucleases from the extreme thermophilic archaebacterium <i>S. Solfataricus</i> ", <i>Eur. J. Biochem.</i> , 1993, 16, 305-310	
	47	Gabrielsen, et al., "Magnetic DNA affinity purification of yeast transcription factor τ -a new purification principle for the ultrarapid isolation of near homogeneous factor", <i>Nucleic Acids Research</i> , 1989, 17, 6253-6267	
	48	Gbenle, "Trypanosoma brucei: Calcium-Dependent Endoribonuclease is Associated with Inhibitor Protein", <i>Exp. Parasitol.</i> , 1990, 71, 432-438	
	49	Gbenle, "Simultaneous Isolation of Cytoplasmic Endoribonuclease and Exoribonuclease of Trypanosoma Brucei", <i>Mol. Biochem. Parasitol.</i> , 1985, 15, 37-47	
	50	Gerdes, K., et al., "Mechanism of Killer Gene Activation. Antisense RNA-dependent Rnase III Cleavage Ensures Rapid Turn-over of the Stable-Hok, SsrnB and PndA Effector Messenger RNAs", <i>J. Mol. Biol.</i> , 1992, 226, 637-649	
EXAMINER		DATE CONSIDERED	



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. ISIS-5207	Application No. 10/701,236
		Applicant Brenda F. Baker, et al.	
		Filing Date November 4, 2003	Group 1635
		Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	51	Gingeras, et al., "Hybridization properties of immobilized nucleic acids", <i>Nucl. Acids Res.</i> , 1987, 15, 5373-5391	
	52	Goldkorn, T. And Prockop, D.J., "A simple and efficient enzymatic method for covalent attachment of DNA to cellulose. Application for hybridization-restriction analysis and for <i>in vitro</i> synthesis of DNA probes", <i>Nucleic Acids Res.</i> , 1986, 14, 9171-9191	
	53	Goodchild, et al., "Conjugates of Oligonucleotides and Modified Oligonucleotides: A Review of their Synthesis and Properties", <i>Bioconjugate Chem.</i> , 1990, 1(3), 165-187	
	54	Goss, T.A. and Bard, M., "High-performance affinity chromatography of DNA", <i>J. Chromatogr.</i> , 1990, 508, 279-287	
	55	Guo, et al., "Direct fluorescence analysis of genetic polymorphisms by hybridization with oligonucleotide arrays on glass supports", <i>Nucl. Acids Res.</i> , 1994, 22, 5456-5465	
	56	Hyrup, B. And Nielsen, P., "Peptide Nucleic Acids (PNA): Synthesis, Properties and Potential Applications", <i>Bioorganic & Med. Chem.</i> , 1996, 4, 5-23	
	57	Kadonaga, J.T. and Tjian, R., "Affinity purification of sequence-specific DNA binding proteins", <i>Proc. Natl. Acad. Sci. USA</i> , 1986, 83, 5889-5893	
	58	Kadonaga, J.T., "Purification of Sequence-Specific Binding Proteins b DNA Affinity Chromatography", <i>Methods in Enzymology</i> , 1991, 208, 10-23	
	59	Kasher, et al., "Rapid Enrichment of HeLa Transcription Factors IIIB and IIIC by Using Affinity Chromatography Based on Avidin-Biotin Interactions", <i>Mol. And Cell. Biol.</i> , 1986, 6, 3117-3127	
	60	Kawaguchi, et al., "Purification of DNA-binding transcription factors by their selective adsorption of the affinity atex particles", <i>Nucleic Acids Research</i> , 1989, 17, 6229-6240	
EXAMINER		DATE CONSIDERED	



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. ISIS-5207	Application No. 10/701,236
		Applicant Brenda F. Baker, et al.	
		Filing Date November 4, 2003	Group 1635
		Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	61	Kennedy, "Hydrophobic Chromatography", <i>Methods in Enzymology</i> , 1990, 182, 339-343	
	62	Knecht, D., "Application of Antisense RNA to the Study of the Cytoskeleton: Background, Principles, and a Summary of Results Obtained with Myosin Heavy Chain", <i>Cell Motil. and Cytoskel.</i> , 1989, 14, 92-102	
	63	Knochbin and Lawrence, "An antisense RNA involved in p53 mRNA maturation in murine erythroleukemia cells induced to differentiate", <i>EMBO J.</i> , 1989, 8, 4107-4114	
	64	Krinke, L. And Wulff, D., "RNase III-dependent hybrolisis of λ cII-O gene mRNA mediated by λ OOP antisense RNA", <i>Genes & Devel.</i> , 1990, 4, 2223-2233	
	65	Krystal, et al., "N-myc mRNA Forms an RNA-RNA Duplex with Endogenous Antisense Transcripts", <i>Mol. And Cell. Biol.</i> , 1990, 10, 4180-4191	
	66	Lengyel, <i>J. Enzym. Res.</i> , 1987, 7, 511-519	
	67	Liao, "A pyrimidine-guanine sequence-specific ribonuclease from <i>Rana catesbeiana</i> (bullfrog) oocytes", <i>Nucl. Acids Res.</i> , 1992, 20, 1371-1377	
	68	Lohrmann, et al., "New Solid Supports for DNA Synthesis" <i>DNA</i> , 1984, 3, 122	
	69	Lund, et al., "Assessment of methods for covalent binding of nucleic acids to magnetic beads, Dynabeads™, and the characteristics of the bound nucleic acids in hybridization reactions", <i>Nucl. Acids Res.</i> , 1988, 16, 10861-10880	
	70	Maniak, M. And Nellen, W., "Evidence for a feedback regulated back-up promoter which controls permanent expression of a <i>Dictyostelium</i> gene", <i>Nucl. Acids Res.</i> , 1990, 18, 5375-5380	
EXAMINER		DATE CONSIDERED	



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. ISIS-5207	Application No. 10/701,236
		Applicant Brenda F. Baker, et al.	
		Filing Date November 4, 2003	Group 1635
		Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	71	Matson, et al., " Biopolymer Synthesis on Polypropylene Supports ", <i>Anal. Biochem.</i> , 1994 , 217, 306-310	
	72	Maskos, U. And Southern, E.M., " Oligonucleotide hybridisations on glass supports: a novel linker for oligonucleotide synthesis and hybridisation properties of oligonucleotides synthesised <i>in situ</i> ", <i>Nucl. Acids. Res.</i> , 1992 , 20, 1679-1684	
	73	McBride, L.J. and Caruthers, M.H., " An Investigation of Several Deoxynucleoside Phosphoramidites Useful for Synthesizing Deoxyoligonucleotides ", <i>Tetrahedron Letters</i> , 1983 , 24, 245-248	
	74	Meegan, J.M. and Marcus, P.I., " Double-Stranded Ribonuclease Coinduced with Interferon ", <i>Science</i> , 1989 , 244, 1089-1091	
	75	Menelev, et al., <i>Bioorg. & Med. Chem. Lett.</i> , 1994 , 4(24), 2929-2934	
	76	Milligan, <i>J. Med. Chem.</i> , 1993 , 36, 1923	
	77	Narhi, et al., " Hydrophobic Interaction Chromatography in Alkaline pH ", <i>Anal. Biochem.</i> , 1989 , 182, 266-270	
	78	Nellen, W., C., " What makes an mRNA anti-sense-itive? ", <i>Curr. Opin. Cell. Biol.</i> , 1993 , 18, 419-424	
	79	Nellen, W., et al., " Mechanisms of gene regulation by endogenous and artificially introduced antisense RNA ", <i>Biochem., Soc. Trans.</i> , 1992 , 20, 750-754	
	80	Nitta, et al., " Purification and Some Properties of Ribonuclease from <i>Xenopus laevis</i> Eggs ", <i>Biol. Pharm. Bull. (Jpn.)</i> , 1993 , 16, 353-356	
EXAMINER		DATE CONSIDERED	



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. ISIS-5207	Application No. 10/701,236
		Applicant Brenda F. Baker, et al.	
		Filing Date November 4, 2003	Group 1635
		Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	81	Noguchi, et al., "Characterization of an Antisense Inr Element in the eIF-2 α Gene", <i>J. Biol. Chem.</i> , 1994, 269, 29161-29167	
	82	Noyes, et al., "Nucleic Acid Hybridization Using DNA Covalently Coupled to Cellulose", <i>Cell</i> , 1975, 5, 301-310	
	83	Pease, et al., "Light-generated oligonucleotide arrays for rapid DNA sequence analysis", <i>Proc. Natl. Acad. Sci. USA</i> , 1994, 91, 5022-5026	
	84	Pon, et al., "Derivatization of Controlled Pore Glass Beads for Solid Phase Oligonucleotide Synthesis", <i>BioTech.</i> , 1988, 6, 768-773	
	85	Prokipcak, et al., "Purification and Properties of a Protein that Binds to the C-terminal Coding Region of Human c-myc mRNA", <i>J. Biol. Chem.</i> , 1994, 269, 9261-2969	
	86	Saito, H. And Richardson, C., "Processing of mRNA by Ribonuclease III Regulates Expression of Gene 1.2 of Bacteriophage T7", 1981, <i>Cell</i> , 27, 533-542	
	87	Sands, et al., "Biodistribution and Metabolism of Internally ³ H-Labeled Oligonucleotides. II. 3',5'-Blocked Oligonucleotides", <i>Am. Soc. Pharmacol. Exp. Ther.</i> , 1995, 47, 636-646	
	88	Schott, "Template-Chromatographie An Stationar Gebundenen Oligonukleotiden", <i>J. Chromatogr.</i> , 1975, 115, 461-476	
	89	Seliger, H., "Handelsubliche Polymere als Trager in der Oligonucleotidsynthese, 1", <i>Die Makromolekulart Chemie</i> , 1975, 176, 1611-1627	
	90	Seliger, H., and Aumann, G., "Trager-Oigonucleotidsynthese an unvernetzten Copolymeren aus Vinylalkohol und N-Vinylpyrrolidon", <i>Die Makromolekulare Chemie</i> , 1975, 176, 609-627	
EXAMINER		DATE CONSIDERED	



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. ISIS-5207	Application No. 10/701,236
		Applicant Brenda F. Baker, et al.	
		Filing Date November 4, 2003	Group 1635
		Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	91	Seliger, H. And Aumann, G., " Oligonucleotide Synthesis on a Polymer Support Soluble in Water and Pyridine ", <i>Tetrahedron Letters</i> , 1973, No. 31, 2911-2914	
	92	Shibahara, S. et al., "Inhibition of human immunodeficiency virus (HIV-1) replication by synthetic oligo-RNA derivatives," <i>Nucl. Acids Res.</i> , 1989, 17(1), 239-252	
	93	Siddell, S.G., " RNA Hybridization to DNA Coupled with Cyanogen-Bromide-Activated Sephadex ", <i>Eur. J. Biochem.</i> , 1978, 92, 621-629	
	94	Smith, et al., " The synthesis of oligonucleotides containing an aliphatic amino group at the 5' terminus: synthesis of fluorescent DNA primers for use in DNA sequence analysis ", <i>Nucl. Acids Res.</i> , 1985, 13, 2399-2412	
	95	Stein, C.A. et al., " Antisense Oligonucleotides as Therapeutic Agents - Is the Bullet Really Magical? ", <i>Science</i> , 1993, 261, 1004-1012	
	96	Stoldt, P. And Zillig, W., " Antisense RNA mediates transcriptional processing in an archaebacterium, indicating a novel kind of RNase activity ", <i>Mol. Microbiol.</i> , 1993, 7, 875-882	
	97	Strickland, et al., " Antisense RNA Directed Against the 3' Noncoding Region Prevents Dormant mRNA Activation in Mouse Oocytes ", <i>Science</i> , 1988, 241, 680-684	
	98	Stull, et al., " Antigene, Ribozyme and Aptamer Nucleic Acid Drugs: Progress and Prospects ", <i>Pharm. Res.</i> , 1995, <i>Pharm. Rev.</i> , 12, 465-482	
	99	Syvanen, et al., " Quantification of polymerase chain reaction products by affinity-based hybrid collection ", <i>Nucl. Acids Res.</i> , 1988, 16, 11327-11338	
	100	Szyf, et al., " Growth Regulation of Mouse DNA Methyltransferase Gene Expression ", <i>J. Biol. Chem.</i> , 1991, 266, 10027-10030	
EXAMINER		DATE CONSIDERED	



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. ISIS-5207	Application No. 10/701,236
		Applicant Brenda F. Baker, et al.	
		Filing Date November 4, 2003	Group 1635
		Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	101	Tseng, et al., "Antisense Oligonucleotide Technology in the Development of Cancer Therapeutics", <i>Cancer Gene Therapeutics</i> , 1994, 1, 65-71	
	102	Uhlmann, et al., "Antisense Oligonucleotides: A New Therapeutic Principle", <i>Chem. Rev.</i> , 1990, 90, 543	
	103	Van Ness, et al., "A versatile solid support system for oligodeoxynucleotide probe-based hybridization assays", <i>Nucleic Acids Research</i> , 1991, 19, 3345-3350	
	104	Volk, et al., "An antisense transcript from the <i>Xenopus laevis</i> bFGF gene coding for an evolutionarily conserved 24 kd protein", <i>EMBO J.</i> , 1989, 8, 2983-2988	
	105	Westermann, et al., "Inhibition of expression of SV40 virus large T-antigen by antisense oligodeoxyribonucleotides", <i>Biomed. B. Acta.</i> , 1989, 48, 85-93	
	106	Wetlaufer, et al., "Surfactant-Mediated Protein Hydrophobic-Interaction Chromatography", <i>J. Chromatography</i> , 1986, 359, 55-60	
	107	Wu, et al., "Purification and Properties of <i>Drosophila</i> Heat Shock Activator Protein", <i>Science</i> , 1987, 238, 1247-1253	
	108	Wu, et al., "High Resolution Separation and Analysis of Biological Macromolecules", <i>Methods in Enzymology</i> , 1996, 270, 27-47	
	109	Yashima, et al., "High-performance affinity chromatography of oligonucleotides on nucleic acid analogue immobilized silica gel columns", <i>J. Chromatog.</i> , 1992, 603, 111-119	
	110	Yasuda, et al., "Purification and characterization of a ribonuclease from human spleen", <i>Eur. J. Biochem.</i> , 1990, 191, 523-529	
EXAMINER		DATE CONSIDERED	



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. ISIS-5207	Application No. 10/701,236
		Applicant Brenda F. Baker, et al.	
		Filing Date November 4, 2003	Group 1635
		Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	111	Zarytova, et al., "Affinity Chromatography of DNA Fragments and P-Modified Oligonucleotides", <i>Analyt. Biochem.</i> , 1990, 188, 214-218	
	112	Zuckermann, et al., "Efficient methods for attachment of thiol specific probes to the 3'-ends of synthetic oligodeoxyribonucleotides", <i>Nucleic Acids Research</i> , 1987, 15, 5305-5321	
	113	Arya, S. K. et al., "Inhibition of RNA Directed DNA Polymerase of Murine Leukemia Virus by 2'-O-Alkylated Polyadenylic Acids," <i>Biochemical and Biophysical Research Communications</i> , 1974, 59(2), 608-615	
	114	Arya, S. K. et al., "Inhibition of Synthesis of Murine Leukemia Virus in Cultured Cells by Polyribonucleotides and Their 2'-O-Alkyl Derivatives," <i>Molecular Pharmacology</i> , 1976, 12, 234-241	
	115	Agrawal, S., "Antisense Oligonucleotides: Towards Clinical Trials," <i>TIBTECH</i> , 1996, 14, 376-388	
	116	Branch, A., "A Good Antisense is Hard to Find," <i>TIBS</i> , 1998, 23, 45-50	
	117	DeClercq, E. et al., "Influence of various 2- and 2'-substituted polyadenyl acids on murine leukemia virus reverse transcriptase," <i>Cancer Letters</i> , 1979, 7, 27-37	
	118	Hammerhead Ribozymes," <i>Science</i> , 1991, 253, 314-317	
	119	Hobbs, J. et al., "Polynucleotides Containing 2'-Amino 2'-deoxyribose and 2'-Azido-2'-deoxyribose [†] ," <i>Biochem.</i> , 1973, 12, 5138-5145	
	120	Hobbs, J. et al., "Poly 2'-Deoxy-2'-Aminouridylic Acid, 1972, 46(4), 1509-1515	
EXAMINER		DATE CONSIDERED	



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office	Docket No. ISIS-5207	Application No. 10/701,236
	Applicant Brenda F. Baker, et al.	
	Filing Date November 4, 2003	Group 1635
	Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
	121	Hobbs, J. et al., "Polynucleotides Containing 2'-Chloro-2'-deoxyribose," <i>Biochem.</i> , Eckstein et al., Ed., 1972 , <i>11</i> , 4336-4344
	122	Ohtsuki, et al., "Isolation and purification of double-stranded ribonuclease from calf thymus", <i>J. Biol. Chem.</i> , 1977 , <i>252</i> , 483-491
	123	Monia, et al., "Antitumor activity of a phosphorothioate antisense oligodeoxynucleotide targeted against c-raf kinase", <i>Nature Medicine</i> , 1996 , <i>2</i> , 668-675
	124	Pieken, W. et al., "Kinetic Characterization of Ribonuclease-Resistant 2'-Modified Hammerhead Ribozymes," <i>Science</i> , 1991 , <i>253</i> , 314-317
	125	Pilet, J. et al., "Structural parameters of single and double helical polyribonucleotides," <i>Biochem Biophys Res Commun</i> , 1973 , <i>52(2)</i> , 517-523
	126	Rottman, F. et al., "Polynucleotides Containing 2'- O-Methyladenosine. I. Synthesis by Polynucleotide Phosphorylase," <i>Biochem</i> , 1968 , <i>7</i> , 2634-2641
	127	Rottman, F. et al., "Polymers Containing 2'-O-Methylnucleotides. II. Synthesis of Heteropolymers," <i>Biochem</i> , 1969 , <i>8(11)</i> , 4354-4361
	128	Wincott et al., "Synthesis, deprotection, analysis and purification of RNA and ribozymes," <i>Nucl. Acids Res.</i> , 1995 , <i>23(14)</i> , 2677-2684
	129	Zmudzka, B. et al., "Poly 2'-0-methylcytidylic acid and the role of the 2'-hydroxyl in polynucleotide structure," <i>Biochem Biophys Res Commun</i> , 1969 , <i>37(6)</i> , 895-901
	130	Brantl, S., "Antisense-RNA regulation and RNA interference," <i>Biochimica et Biophysica Acta</i> , 2002 , <i>1575</i> , 15-25
EXAMINER		DATE CONSIDERED



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office		Docket No. ISIS-5207	Application No. 10/701,236
		Applicant Brenda F. Baker, et al.	
		Filing Date November 4, 2003	Group 1635
		Confirmation No. 5208	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	131	Chaput, J.C., et al., "DNA polymerase-mediated DNA synthesis on a TNA template," <i>J. Am. Chem. Soc.</i> , 2003 , <i>125</i> , 856-857	
	132	Damha, M.J., et al., "Hybrids of RNA and arabinonucleic acids (ANA and 2'-F-ANA) are substrates of ribonuclease H," <i>J. Am. Chem. Soc.</i> , 1998 , <i>120</i> , 12976-12977	
	133	Elbashir, S.M., et al., "Functional anatomy of siRNAs for mediating efficient RNAi in <i>Drosophila melanogaster</i> embryo lysate," <i>EMBO J.</i> , 2001 , <i>20(23)</i> , 6877-6888	
	134	Martinez, J., et al., "Single-stranded antisense siRNAs guide target RNA cleavage in RNAi," <i>Cell</i> , 2002 , <i>110</i> , 563-574	
	135	Parrish, S., et al., "Functional anatomy of a dsRNA trigger: differential requirement for the two trigger strands in RNA interference," <i>Molecular Cell</i> , 2000 , <i>6</i> , 1077-1087	
	136	Schöning, K.-U., et al., "Chemical etiology of nucleic acid structure: the α -threofuranosyl-(3'→2') oligonucleotide system," <i>Science</i> , 2000 , <i>290</i> , 1347-1351	
	137	Wang, J., et al., "Cyclohexene nucleic acids (CeNA): Serum stable oligonucleotides that activate RNase H and increase duplex stability with complementary RNA," <i>J. Am. Chem. Soc.</i> , 2000 , <i>122</i> , 8595-8602	
	138	Wilds, C.J., et al., "Duplex recognition by oligonucleotides containing 2'-deoxy-2'-fluoro-D-arabinose and 2'-deoxy-2'-fluoro-D-ribose. Intermolecular 2'-OH-phosphate contacts versus sugar puckering in the stabilization of triple-helical complexes," <i>Bioconjugate Chem.</i> , 1999 , <i>10</i> , 299-305	
	139	Wu, X., et al., "Base-pairing systems related to TNA: α -threofuranosyl oligonucleotides containing phosphoramidate linkages," <i>Organic Lett.</i> , 2002 , <i>4(8)</i> , 1279-1282	
EXAMINER		DATE CONSIDERED	



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office				Docket No. ISIS-5207		Application No. 10/701,236	
				Applicant Brenda F. Baker, et al.			
				Filing Date November 4, 2003		Group 1635	
				Confirmation No. 5208			
U. S. PATENT DOCUMENTS							
Examiner Initial		Document No.	Date	Name	Class	Subclass	
	140	3,687,808	8/29/72	Merigan, et al.	195	28	
	141	5,013,830	5/7/91	Ohtsuka, et al.	536	27	
	142	5,023,243	6/11/91	Tullis	514	44	
	143	5,142,047	8/25/92	Tullis	514	44	
	144	5,149,797	9/22/92	Pederson, et al.	536	27	
	145	5,177,198	1/5/93	Spielvogel, et al.	514	45	
	146	5,130,302	7/14/92	Spielvogel, et al.	514	45	
	147	5,223,618	6/29/93	Cook, et al.	544	276	
	148	5,235,033	8/10/93	Summerton, et al.	528	391	
	149	5,256,775	10/26/93	Froehler	536	25.6	
	150	5,264,562	11/23/93	Matteucci	536	23.1	
	151	5,264,564	11/23/93	Matteucci	536	23.1	
	152	5,359,044	10/25/94	Cook, et al.	536	23.1	
	153	5,366,878	11/22/94	Pederson, et al.	435	91.3	
	154	5,378,825	1/3/95	Cook, et al.	536	25.34	
	155	5,459,255	10/17/95	Cook, et al.	536	27.13	
	156	5,457,191	10/10/95	Cook, et al.	536	27.13	
EXAMINER				DATE CONSIDERED			



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office				Docket No. ISIS-5207		Application No. 10/701,236	
				Applicant Brenda F. Baker, et al.			
				Filing Date November 4, 2003		Group 1635	
				Confirmation No. 5208			
U. S. PATENT DOCUMENTS							
Examiner Initial		Document No.	Date	Name	Class	Subclass	
	157	5,466,786	11/14/95	Buhr, et al.	536	26.26	
	158	5,476,925	12/19/95	Letsinger, et al.	536	23.1	
	159	5,484,908	1/16/96	Froehler, et al.	536	24.31	
	160	5,506,351	4/9/96	McGee	536	55.3	
	161	5,514,786	5/7/96	Cook, et al.			
	162	5,386,023	1/31/95	Sanghvi, et al.	536	25.3	
	163	5,489,677	2/6/96	Sanghvi, et al.	536	22.1	
	164	5,539,083	7/23/96	Cook, et al.	530	333	
	165	5,506,337	4/9/96	Summerton, et al.	528	391	
	166	5,403,711	4/4/95	Walder, et al.	435	6	
	167	5,508,270	4/16/96	Baxter, et al.	514	47	
	168	5,804,683	09/08/98	Usman, et al.	536	25.31	
	169	5,891,683	04/06/99	Usman, et al.	435	91.31	
	170	4,373,071	2/8/83	Itakura	525	375	
	171	4,401,796	8/30/83	Itakura	525	340	
	172	4,469,863	9/4/84	Ts'o., et al.	536	27	
	173	4,507,433	3/26/85	Miller, et al.	525	54.11	
EXAMINER				DATE CONSIDERED			



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office				Docket No. ISIS-5207		Application No. 10/701,236	
				Applicant Brenda F. Baker, et al.			
				Filing Date November 4, 2003		Group 1635	
				Confirmation No. 5208			
U. S. PATENT DOCUMENTS							
Examiner Initial		Document No.	Date	Name	Class	Subclass	
	174	4,812,512	3/14/89	Buendia, et al.	525	54.11	
	175	4,908,405	3/13/90	Bayer, et al.	525	61	
	176	5,391,667	2/21/95	Dellinger	526	264	
	177	5,519,134	5/21/96	Acevedo, et al.	544	243	
	178	5,614,617	3/25/97	Cook, et al.	536	23.1	
	179	5,962,425	10/05/99	Walder et al.	514	44	
	180	5,804,683	09/08/98	Usman et al.	536	25.31	
	181	5,891,683	04/06/99	Usman et al.	435	91.31	
	182	5,898,031	04/27/99	Crooke	435	172.3	
	183	6,107,094	08/22/00	Crooke	435	455	
	184	5,567,811	10/22/96	Misiura, et al.	536	25.34	
	185	5,576,427	11/19/96	Cook, et al.	536	23.1	
	186	5,591,722	01/07/97	Montgomery, et al.	514	45	
	187	5,607,922	03/04/97	De Clercq, et al.	514	43	
	188	5,639,873	06/17/97	Barascut, et al.	536	25.3	
	189	5,681,940	10/28/97	Wang, et al.	536	22.1	
	190	5,780,607	07/14/98	Goodnow, Jr., et al.	536	22.1	
EXAMINER				DATE CONSIDERED			



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office	Docket No. ISIS-5207	Application No. 10/701,236
	Applicant Brenda F. Baker, et al.	
	Filing Date November 4, 2003	Group 1635
	Confirmation No. 5208	

U. S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Name	Class	Subclass
	191	6,001,841	12/14/99	Cook, et al.	514	261
	192	6,262,241 B1	07/17/01	Cook, et al.	536	22.1
	193	6,329,346 B1	12/11/01	Muhlegger, et al.	514	44
EXAMINER				DATE CONSIDERED		



Form PTO-1449 Modified List of Patent and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce Patent and Trademark Office	Docket No. ISIS-5207	Application No. 10/701,236
	Applicant Brenda F. Baker, et al.	
	Filing Date November 4, 2003	Group 1635
	Confirmation No. 5208	

FOREIGN PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Country	Translation	
					YES	NO
	194	WO 92/22651	23.12.92	PCT		
	195	WO 92/20822	26.11.92	PCT		
	196	WO 92/20823	26.11.92	PCT		
	197	WO 94/17093	4.8.94	PCT		
	198	WO 94/02499	3.2.94	PCT		
	199	WO 94/02501	3.2.94	PCT		
	200	339,842	2.11.89	EPO		
	201	2-264792	29.10.90	Japan		
	202	WO 92/07065	04/30/92	PCT		
	203	W0 99/32619	07/1999	PCT		X
	204	WO 01/049687 A3	07/12/01	PCT		
EXAMINER				DATE CONSIDERED		